

## A NEW SPECIES OF *ATRACTUS* FROM BRAZIL AND THE STATUS OF *A. GUENTHERI* (SERPENTES: COLUBRIDAE)

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**ABSTRACT:** *Atractus pantostictus* is described for Brazilian Central Plateau, and its affinities with the other species of *Atractus* are discussed, especially in regard to *Atractus guentheri*, which the new species was often confused.

**KEYWORDS:** *Atractus*, *Atractus pantostictus* sp. n., *Atractus guentheri*, Brazil, Colubridae, Xenodontinae

### INTRODUCTION

The genus *Atractus* Wagler, 1828, includes about 80 species of fossorial snakes. The taxonomic status of most species is, at least, confused, and there have been only a few attempts at taxonomic revisions<sup>5,7</sup>. Often, a great number of *Atractus* specimens in collections bear no or erroneous identifications.

Wucherer<sup>9</sup> described *Geophis guentheri* from a single specimen from Canavieiras, in the southern portion of the State of Bahia, Brazil. The description is adequate and contains an quite accurate illustration of the snake. Later Boulenger<sup>1</sup> allocated the species to the genus *Atractus* and described a second morph from Rio de Janeiro, Brazil. Subsequent authors<sup>8</sup> extended the distribution of this snake to the eastern forest of Brazil.

Examination of the type specimen and the rest of Boulenger's material at the Natural History Museum, London (BMNH), revealed that the second morph is

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actually *Atractus maculatus*, and most of the material commonly identified as *A. guentheri* is an undescribed species which we describe herein.

## MATERIAL AND METHODS

This work is based upon the examination of the specimens deposited at the Instituto Butantan, São Paulo (IB); the Museu de História Natural Capão da Imbuia, Curitiba (MHNCI); Museu Nacional do Rio de Janeiro, Rio de Janeiro (MNRJ); Museu de Zoologia da Universidade de São Paulo, São Paulo (MZUSP); and the Natural History Museum, London (BMNH). The usual structures of snake morphology were examined<sup>2,3</sup>. Paired structures are given in a right/left designation.

## RESULTS

### *Atractus pantostictus* sp.n. (Figs. 1-3 and 5)

*Atractus guentheri* (in part), Peters et Orejas-Miranda, 1970; Vanzolini, 1986.

*Diagnosis:* An *Atractus* with 7 supralabials, 17 rows at midbody (sometimes reduced to 16 near the cloaca), with four or five longitudinal series of dark colored spots on dorsum, sometimes fused in small cross bars and an immaculate venter. It can be differentiated from *A. guentheri* by lacking a vertebral streak, and from *A. reticulatus* by the number of dorsals and by lacking a white nuchal collar in juveniles.

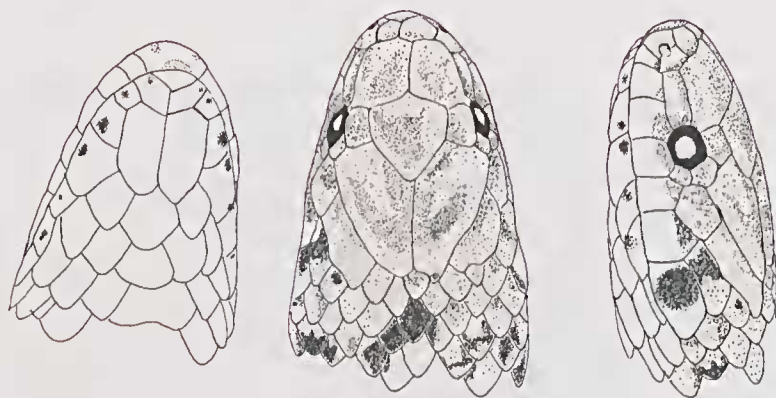


Fig. 1: Ventral, dorsal and lateral views of the head of *Atractus pantostictus* sp.n. (MNRJ 4459).

*Distribution* (Fig. 4): Central Brazil, from Aliança do Tocantins, Tocantins, in the north to the metropolitan region of São Paulo in the south; not crossing the São Francisco river in the east, or reaching the States of Mato Grosso and Mato Grosso do Sul in the west.

*Holotype*: IB 54844, male, Franco da Rocha, SP, Brazil, 30.vi.1992, M.S. Santos coll.

*Paratypes*: IB 54235, female, Jundiaí, SP, Brazil, 15.II.1991, M.I.B. Sacioto coll.; MNRJ 4459, female, Pirapora (Fazenda Triângulo Formoso), MG, Brazil, XI.1987, M. Porto e G. Kistuemacher coll.; MZUSP 3158, female, Boracéia, SP, Brazil, vi.1956, J. Pinto coll.

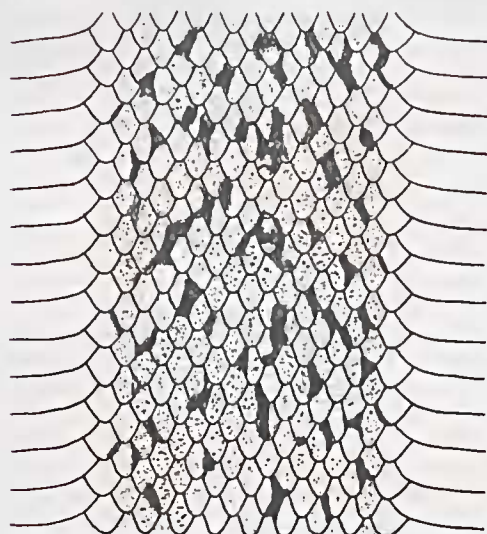


Fig. 2: Coloration pattern of the dorsum of *Atractus pantostictus* sp.n.

*Dimensions of the Holotype*: Head length 11.1 mm; head width 6.0 mm; orbit diameter 1.5 mm; snout to orbit distance 3.4 mm; cephalic index 0.54 and orbit 0.43 times the snout length. Cephalic scutes measurements: rostral height 1.9 mm; loreal length 2.5/2.5 mm; prefrontal length 2.4/2.3 mm; prefrontal width 2.1/2.4 mm; frontal length 3.1 mm; frontal width 2.6 mm; parietal length 4.3/4.0 mm; parietal width 3.0/2.8 mm and chinshield length 2.3/2.2 mm; chinshield width 1.3/1.2 mm. Snout-vent length (SVL) 246 mm and tail length (TL) 27 mm; tail/snout-vent length 0.11.

*Description of the Holotype*: An adult male, head not distinct from the body; internasals small; prefrontals slightly longer than wide; loreal long; postoculars 2; temporals 1 + 2; supralabials 7, 3 + 4 entering the orbit; infralabials 7, 1-4 contacting the chinshield; 17 scales rows at midbody; ventrals 155; anal single; paired subcaudals 34. There are 7 maxillary teeth in 7. Dorsal scales smooth lacking apical pits.

*Variation*: Supralabials sometimes 6 (3+4), or 6 (2+3); infralabials sometimes 7 (1-3) or 8 (1-4). In single specimens there are either 6 or 8 maxillary teeth. Dorsal scales rows reduced posteriorly to 16 (14 specimens) or 15 (1 specimen); this reduction is the result of the fusion of the eighth and the ninth rows between the levels of ventrals 126 to 139; this type of reduction is a unique feature in



Fig. 3: A female of *Atractus pantostictus* sp.n., live specimen from the City of São Paulo, 11.i.1992.



Fig. 4: Map of distribution of (.) *Atractus pantostictus* sp.n. and  $\nabla$  *Atractus guentheri*.

*Atractus*. Ventrals 155-175 in females and 142-159 in males; anal single; subcaudals 21-29 in females and 27-34 in males. Variation in mensural and meristic data are given in Table I.

*Coloration*: The head is dark at the above and pale below and on the anterior supralabials. The upper portion of the sixth supralabial is pigmented, and, usual-



TABLE 1

Variation of *Atractus pantostictus* sp.n.

Character	n	range			95% conf. lim		SD
		low	high	mean	L1	L2	
Females							
SVL (mm)	37	111.0	409.0				
Percents of SVL							
Tail Length	35	8.5	14.4	10.2	9.736	10.574	
Head Length	34	2.5	6.3	4.3	3.865	4.675	
Percents of Head Length							
Head Width	34	40.9	81.7	53.9	51.183	56.701	
Snout-Orbit	34	21.5	37.8	28.4	27.111	29.659	
Counts							
Ventral	36	155	175	164.9			4.506
Subcaudal	35	21	29	23.6			1.684
Males							
SVL (mm)	33	101.0	361.0				
Percents of SVL							
Tail Length	33	8.1	18.2	13.1	12.423	13.728	
Head Length	31	3.1	7.1	4.3	3.992	4.698	
Percents of Head Length							
Head Width	31	44.3	65.9	54.1	51.781	56.354	
Snout-Orbit	31	22.0	40.0	28.8	27.344	30.165	
Counts							
Ventral	33	142	159	149.5			4.797
Subcaudal	34	27	34	29.1			1.737

ly, there is a dark spot on the seventh supralabial. There is also a darker coloration around the orbit, on the snout, on the parietals, and on the lower secondary temporal. Some specimens have a circular spot on the first five or six infralabials. In some specimens a poorly defined dark nuchal collar is present. The ground color of the body is brown. There are four or five longitudinal series of dark colored spots on the dorsum, these sometimes merging into small cross bars. The venter is immaculate.

*Hemipenis*: (Fig. 5): The hemipenis is shallowly forked, not capitate, with a semi-centrifugal sulcus. The ornamentation consists of several small spines, which are



enlarged on the basal region beneath the sulcus. This arrangement agrees with Savage's<sup>7</sup> undifferentiated type of hemipenis.

*Natural History:* At the Laboratório de Herpetologia of Instituto Butantan, a female *Atractus pantostictus* from the City of São Paulo (IB 54655), layed 4 eggs on 15.I.1992, with a mean lenght of 36.7 mm ( $S^2 = 8,4\text{mm}^2$ ) and a mean weight of 1.88 g. These eggs hatched on 2.IX.1992. The neonates had a mean SVL of 130 mm, mean TL of 13 mm and mean weight of 1.5 mg. An *A. reticulatus*, from the same locality, layed 3 eggs on 15.I.1992, which hatched on 3.IX.1992. The *A. reticulatus* neonates had a mean SVL of 110 mm, mean TL of 12 mm, and mean weight of 1.1 g. The length of hatching are much longer then the expected for colubrid snakes. On other ocasions, *A. reticulatus* eggs have taken 3 months, but we think this was a consequence of the low temperature to which they were exposed.

*Etymology:* The specific name is derived from the Greek *pantostiktos*, meaning spotted all over, in allusion to the distinctive pattern of this species.

#### *Atractus guentheri* (Wucherer, 1861)

*Geophis guentheri* Wucherer, 1861

*Atractus guentheri* (in part), Boulenger 1894; Peters et Orejas-Miranda, 1970; Vanzolini, 1986

*Diagnosis:* An *Atractus* with 17 rows at midbody, a broad black vertebral streak, a series of small lateral blotches on anterior of body, and a thin ventrolateral zig-zag stripe.

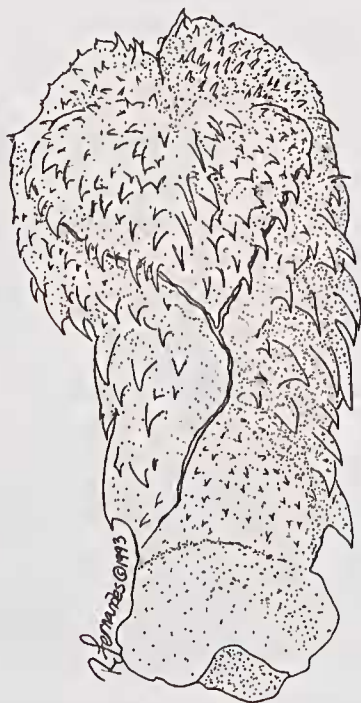


Fig. 5: Hemipenis of *Atractus pantostictus* sp.n. (IB 54844)

*Distribution* (Fig. 4): Known only from type locality.

*Holotype*: BMNH 1946.1.1.76, male, Canavieiras, south of the State of Bahia, Brazil, Wucherer coll.

*Dimensions of the Holotype*: Head length 8.0 mm; head width 5.5 mm; orbit diameter 1.5 mm; snout to orbit distance 3.3 mm; cephalic index 0.69 and orbit 0.45 times the snout length. Snout-vent length 280 mm; tail length 47 mm and tail/snout-vent length 0,17.

*Description of the Holotype*: The holotype is a well preserved male. Head not distinct from the body; internasals small; prefrontals one and a half times longer than wide; loreal long; supralabials 7, 3+4 entering the orbit; infralabials 7, 1-4 contacting the chinshield; postoculars 2; temporals 1+2. Dorsal scales smooth lacking apical pits, in 17 unreduced rows. Ventrals 140; anal single; paired subcaudals 30.

*Coloration of the Holotype*: The head color is pale, almost without lateral pigmentation; at the top of the head, there is a pale brown spot on the frontal and the parietals. On the neck there is a black blotch extending into a broad vertebral streak three scales wide. There is also a series of small lateral blotches extending to the ventral 31. The paraventral scales starting at the seventeenth ventral have dark lower edges, forming a ventrolateral zigzag strise. The ventral surface is immaculate trough most of the body, but with scattered dark spots on the tail.

*Hemipenis*: The holotype's hemipenis was examined in the inverted. The impracticality of dissection did not allow more information besides the forked shape of the organ.

## DISCUSSION

As already pointed by Hoogmoed<sup>5</sup> clarification of several old *Atractus* names should be elucidated by examination of a combination of scale characters and color pattern. Similarity of lepidosis lead Boulenger<sup>1</sup> to recognize a broader definition of *A. guentheri* than we do. With the allocation of the two color morphs into *A. guentheri*, *A. pantostictus* remained unrecognized for about a century.

The manner in which scale rows are reduced in *Atractus pantostictus* is unique to the genus *Atractus*. Although it is a plesiomorphic state on colubrids, we think it may represent a reversal, as reduction is not present in *Adelphicos* and *Geophis*, considered the most closely related genera by most authors<sup>4</sup>.

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RESUMO: *Atractus pantostictus* é descrita para o planalto central brasileiro, discute-se suas afinidades com as demais espécies do gênero *Atractus* especialmente com *Atractus guentheri*, com quem tem sido confundida.

UNITERMOS: *Atractus*, *Atractus pantostictus* sp. n., *Atractus guentheri*, Brasil, Colubridae, Xenodontinae

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#### APENDIX — MATERIAL EXAMINED

*Atractus pantostictus*: Tocantins: Aliança do Tocantins IB 43954. Goiás: Minaçu IB 51433. Distrito Federal: Brasília (Jardim Zoológico) MNRJ 4460, 4461, 4462, 4463, 4464, 4465, 4466. Minas Gerais: Belo Horizonte IB 40757, MHNCI 787; Pirapora (Faz. Triângulo Formoso) MNRJ 4459; Uberlândia IB 54604, 54605. São Paulo: Areias (faz. Vargem Grande) IB 40404; Barueri IB 45208; Boracéia MZUSP 3157, 3158; Campo Limpo Paulista IB 9472, 44152, 49225, 54651, 54896; Francisco Morato IB 54633, 54634; Franco da Rocha IB 27305, 42093, 54844; Itapeverica da Serra IB 54699; Jales MZUSP 4094; Jarinu IB 41427; Jundiá IB 2728, 10068, 10069, 42645, 42646, 42647, 43192, 45624, 46228, 46644, 49267, 54235, 54512, 54661; Orlândia IB 44537; Paranapiacaba MZUSP 2811; São José do Rio Preto IB 40028; São José dos Campos IB 27231, 27233, 27234, 29098, 37527, 44527, 45784, 45803, 45807, 46355; São Paulo (Perus) IB 54655, 54886, 54887, 54888, (Pico do Jaraguá) IB 42404, (Pirituba) IB 42485, 53545, 54641; Várzea Paulista IB 9862, 32501, 40855, 40857, 45167.

*Atractus guentheri*: Bahia: Canavieiras: BMNH 1946.11.76

*Atractus maculatus*: Brasil?: BMNH 61.11.18.13, 61.11.18.17. Rio de Janeiro: BMNH 55.4.18.12.

